To: Scott Smith[ssmith@waterdefense.org]
From: Durno, Mark
Sent: Fri 4/8/2016 4:46:57 PM
Subject: Re: Low Blood Pressure in Flint / FW: part 3-lead and phosphate

Scott,

I'm booked solid today. Will look at the information over the weekend.

Sent from my iPhone

On Apr 8, 2016, at 7:11 AM, Scott Smith <ssmith@waterdefense.org> wrote:

> Mark,
>
> As we were discussing the low blood pressure symptoms in Flint, Dr. Zelikoff found in her research that high levels of phosphate can lead to low blood pressure.
>
> Given the phosphates we have detected in showers/bathtubs in Flint, could this be the cause of low blood pressure?

Hi Scott, Lead has **never been** linked with low blood pressure or HYPOTENSION---- **However,** depending on the individual and their genetic make-up, high levels of phosphate can lead to low blood pressure. It works through a gene that affects kidney function and bone release of phosphate.

Researchers have shown that FGF23 has a so called sodium conserving effect, meaning it controls the reabsorption of filtered sodium in the kidneys. Mice **lacking** FGF23 excrete higher amounts of sodium in their urine, resulting in low blood pressure. Animals with high FGF23 levels show high levels of sodium in their blood, and in turn, high blood pressure.

A raised level of FGF23 puts increased strain on the heart. Reinhold Erben explains that, "In patients with chronic renal disease, both the phosphate levels and the levels of FGF23 are chronically high. This often leads to cardiovascular disease.